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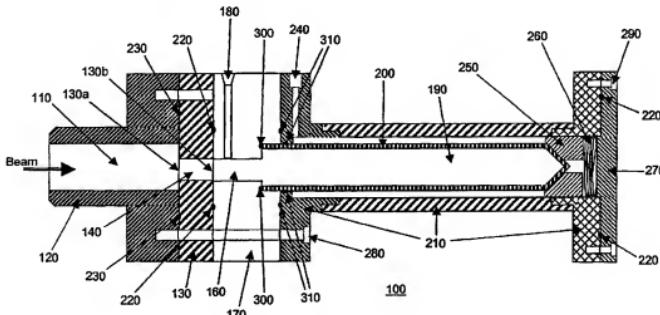
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(54) Title: APPARATUS AND METHOD FOR GENERATING <sup>18</sup>F-FLUORIDE BY ION BEAMS



(57) Abstract: A system and method for producing <sup>18</sup>F-Fluoride by using a particle beam to irradiate conversion medium in gaseous or liquid form. The irradiated conversion medium is contained in a chamber surrounded by a Fluoride adsorbing material to which the produced <sup>18</sup>F-Fluoride adheres. The adsorption properties of the Fluoride adsorbing material are manipulated by an adsorption enhancing/decreasing element. A solvent dissolves the produced <sup>18</sup>F-Fluoride off of the Fluoride adsorbing material while it is in the chamber. The solvent is then processed to obtain the <sup>18</sup>F-Fluoride.

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